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# The Organization of Attitudes toward the Negro as a Function of Education

By
Lessing A. Kahn

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HERBERT S. CONRAD, *Editor*

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# The Organization of Attitudes toward the Negro as a Function of Education

*By*

LESSING A. KAHN

*The Johns Hopkins University*

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LESSING A. KAHN

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# CHAPTER I

# THE PROBLEM

## A. INTRODUCTION

IN 1948, Preston and Kahn (32) carried out a study designed to furnish information about the effect of education upon the intensity and pattern of prejudice among selected out-groups. The experiment demonstrated, among other things, that educated persons on the average manifested more favorable attitudes toward out-groups than did uneducated persons. This finding was of such general interest as to raise the question of whether or not the attitudes of educated and uneducated groups differ in other respects. One possible difference is the extent of attitude generality; that is, because it was thought that education should lead people to consider questions on the basis of their own merits, educated people should show less generality than uneducated people.

The primary purpose of this investigation is to determine whether the structure of verbalized attitudes toward the Negro is a function of a respondent's level of formal education. In order to answer this question, the statistical technique of factor analysis was used. The following formal hypothesis was then postulated: *The composition of a universe of content will show a lesser number of factors and/or greater factor saturations for uneducated subjects than for educated subjects.*

## B. DEFINITIONS OF ATTITUDES

Of all the areas of social psychology, perhaps the one which deals with attitudes and their measurement is the most extensively investigated. The literature dealing with the term "attitude" has so many degrees of meaning and such varying importance for attitude research that one cannot, without unnecessary reiteration, engage in any extensive review. The interested reader, therefore, is referred to the reviews by McNemar (27), Nelson (31), Murphy, Murphy, and Newcomb (29), Bird (2), and others (1, 8, 6).

That attitudes may be made manifest by either overt behavioral responses or by verbal responses is implicit in the views of most students of attitudes. The latter type of attitude response (verbal) has been the most frequently studied in the broader problem of attitude measurement and techniques of scaling. This approach to attitude study is undoubtedly due to the almost insurmountable difficulties involved in designing an investigation in which actual behavior indices of attitudes can be ascertained. Some writers consider the "actual behavior" approach to attitude-research necessary to the over-all problem of validity of verbal attitudes. Even though it is desirable to be able to study the covariation of verbally expressed attitudes and overtly expressed attitudes, one should not be led to the conclusion that studies of either kind of attitude expression are without value. Both kinds of attitude expression are forms of behavior and, therefore, should be subjected to independent evaluation. In the light of these remarks, the present investigation, in which verbal attitudes toward the Negro were studied, is justified.

## C. EDUCATION AND ITS EFFECT ON PREJUDICE

There have been many studies (3, 4,

17, 18, 32, 33, 42) on the effect of education on prejudice, and most of them have demonstrated that education tends to lessen prejudice. By and large this question has been investigated by means of attitude scales or questionnaires administered to groups of subjects with varying amounts of education, and by analysis of the results of single-issue opinion polls on the basis of the educational background of the sample used. Although such studies lend evidence to the proposition that education has an effect on the degree of prejudice, in many of them the basis upon which this conclusion has been reached is subject to serious criticism. Briefly, such criticism may be based mainly on sampling methods and the success in concluding prejudice from the measuring instruments used.

With reference to those studies done with college and other typical groups, McNemar's (27; see also 26, 28) comment is pertinent: "A real social psychology of attitudes is in need of research on groups of greater generality than college students." Investigations, on the other hand, in which samples collected by the usual polling techniques are employed (e.g., Samelson's study [33] and National Opinion Research Center single-item opinion surveys [42]) may be subject to criticisms of selective-sample bias, i.e., interviewer responsibility for respondent selection, and inadequate sample size of the subgroups into which the main sample is subdivided.

As for the kind of attitude-measuring device used by many workers—little evidence has been presented to indicate that the attitude being studied was unidimensional or approximately so.

To observe how these points of criticism were obviated in the present investigation, the reader is referred to the next chapter.

## D. The Problem of Generality and Specificity of Attitudes

It will be recalled that the hypothesis to be investigated here relates to the question of generality and specificity of attitudes toward the Negro as a function of respondent level of education. Unfortunately, the terms "generality" and "specificity" are often used in a variety of ways. It behooves us, therefore, to examine these fundamentally important concepts and to determine the respects in which they can be explicated in terms of the hypothesis and technique of attitude measurement to be used here. Accordingly, in this section the following matters will be treated: (1) the meaning of "generality vs. specificity," and (2) the relationships of factor analysis to attitude generality.

### 1. *The Meaning of "Generality vs. Specificity"*

Essentially, attitude generality or specificity may be defined in three possible ways. The first of these may be termed the "sociological" definition: it refers to an analysis of the percentages of a given population that endorse or reject situations (items) under investigation. For example, in a single-question situation, if 80 per cent of a given group endorse the statement "Negroes should be segregated," one would conclude that the group was generally unfavorable toward the Negro on the matter of segregation. Moreover, the same kind of generality can extend over a set of items or situations. If, for example, 65 per cent of the total number of responses to ten items were unfavorable, the conclusion again would be that the respondents had a generally unfavorable attitude. This meaning of generality, while useful in a certain sense, is of little psychological value in studying such problems as the structure and patterning of group attitudes.

A second approach to generality is defined by the number of situations (items) which a given respondent endorses or rejects. For example, if one respondent endorses nine out of ten items in a given attitude scale, in contrast to another respondent who endorses only five items, one would be prone to conclude that the second respondent's attitude was specific. This conclusion is predicated on the fact that the

first respondent's attitude is evident in a large number of situations in which the stimulus appears; consequently, the attitude must be general. While this approach to attitude generality may be psychologically more meaningful than the first, the uncritical reader may assume that this kind of generality also implies unidimensionality. On the contrary, it is quite conceivable to have a respondent who endorses all situations presented in a scale (generality in this second sense), and yet, upon further analysis of the relationships between the situations in the population of which he is a member, to discover that the scale measured several dimensions, i.e., different attitudes were being tapped.

The final meaning which attaches to attitude generality has to do with degree of interrelationship between scale items. In a table of intercorrelations it is often possible to make a set of rough groupings such that the association between the items in any group is relatively large as compared to their associations with other items in the table. Such large correlations between items in any group indicate that these items must be linked by a common factor. When the item intercorrelations are all high, the presence of underlying association is thereby disclosed, and the assumption of one or more general factors running through all the items may be made. Moreover, if there is hierarchical order among the item intercorrelations, it may be inferred that a single general factor is present and that the set of items is unidimensional as well.

Four methods are available to test for this kind of attitude generality: (*a*) a rather crude test consisting in an examination of the magnitude of item intercorrelations, e.g., those used by Dudycha (9) in his work on punctuality; (*b*) Tryon's or Horn's method of cluster analysis, e.g., that used by Samelson (33) in her study of attitudes toward the Negro; (*c*) factor analysis, e.g., those of Ferguson (16), Carlson (5), Gage (17), Eysenck (14), and others; and (*d*) Guttman scale analysis. In the present investigation, attitude generality of the kind just discussed will be tested for by the method of factor analysis alone.[1]

## 2. *The Relationship of Factor Analysis to Attitude Generality*

The following comments are devoted to an interpretation of various factor analysis solutions with reference to the question of generality.

*a*) *Single-factor solutions.* If, as the result of the application of the factor analysis method to a set of items or situations, a single factor emerges to account for the covariance of the items, one can then assert that there is generality; i.e., a single determining tendency is characteristic of all the items or situations. If the mean of the weights or saturations of the items on this general factor is high, it is then known that responses to the items have been heavily determined by this factor. On the other hand, if the mean of the item saturations in the factor is low, one can conclude that the general determining tendency in the items or situations is weak and that other dimensions specific to each item (i.e., uniqueness) are largely responsible for the responses evoked by the items. This distinction between a high and a low central tendency for the item saturations in a general factor permits one to speak of the strength of attitude generality. Significant variability of the item saturations in a general factor signifies that the responses to each item are being determined by varying amounts of the general factor as well as by varying amounts of factors specific or unique to each item.

*b*) *Multiple-factor solutions.* In a factor analysis solution which yields more than one factor to account for the covariation of items or situations, one cannot strictly speak of generality as used in the above discussion. This is easily seen from the fact that two or more factors imply two or more determining tendencies present in the items or situations. Suppose, for example, that for a given set of items the factor solution yields a general factor which runs through all the items and a group factor with which only a few of the items are saturated. Such an outcome can only mean that in those items saturated only with the general factor, a single dimension may be responsible for the structuring of responses. However, for some of the items of the set, two determining tendencies account for the responses. Further consideration of this factor solution will show that unless the saturations of those items on either the general factor or the general factor plus the group factor are high, the uniqueness characteristic of each of these items may play an important role.

In some multiple-factor solutions it is permissible to speak of generality in a less rigorous sense than that defined for single-factor solutions. Thus, if a factor solution yields a general factor in which the mean of the item saturations is relatively high, and one or more group factors in which the item saturations are relatively low, one could speak of generality being

[1] The problem of "generality vs. specificity" of attitudes toward the Negro was also formulated in terms of Guttman Scale Analysis theory and examined with the data of the present investigation. The results of this study will be presented in a forthcoming journal article.

present. In such a case, one would totally disregard the effects of the group factors, since their contribution to the common factor variance would be relatively little.

### E. General Plan of the Investigation

The following procedures were carried out:

1. Construction of three scales measuring attitudes toward the Negro.

2. Administration of the three scales to two groups of 350 adult subjects each. The two groups were equated with respect to age, sex, marital status, nativity, and religious preference; the groups differed with respect to educational status.

3. Correlating, for each of the experimental groups, the responses to each item with those of every other item in the best scale constructed, Form I. A factor analysis was performed for each of the correlation matrices.

4. Tabulating total scores on the Form I scale and individual-item response frequencies for purposes of the distribution analysis.

## CHAPTER II

## SOURCES OF THE DATA

### A. CONSTRUCTION OF THE QUESTIONNAIRE

BASED mainly on the work of Edwards (10, 11, 12), an attempt to meet the problem of initial item selection for scale inclusion was made by using a combination of the Thurstone-Chave technique of equal-appearing intervals, and the Likert technique. The Thurstone technique provided a means of selecting a set of items which met the criterion of precision (low *Q*-values), and the Likert technique afforded a means for selecting items which were highly discriminating between extreme criterion groups.

For purposes of convenient exposition, the procedure in the construction of the scales used in the present investigation may be discussed under six headings, namely: (1) initial item selection, (2) application of the Thurstone-Chave technique, (3) definition of attitudinal areas, (4) application of the Likert technique, (5) reliability of the scales, and (6) design of the questionnaire.

#### 1. *Initial Item Selection*

The first step in the construction of the attitude scales was to define the universe of content, i.e., verbalized attitudes toward the Negro.

This implied that a rather thorough analysis had to be made of all conceivable areas in which statements of opinion about the Negro might be asserted. The analysis yielded six main areas in which it was believed practically all possible attitudinal statements about the Negro could be embraced. These were (*a*) personality, (*b*) education and schools, (*c*) employment practices, (*d*) civil rights, (*e*) social relations, and (*f*) housing.

The next task was gathering a large number of statements of opinion relating the Negro to these six areas. Approximately three hundred statements were initially collected, mainly from three sources:

*a*) Statements were either constructed or borrowed directly from the literature dealing with the measurement of attitudes toward the Negro (4, 19, 23, 32).

*b*) Statements were obtained from the current literature disseminated by national and local organizations devoted to the reduction of racial and other intergroup tensions.

*c*) Statements were constructed by a number of professional colleagues who were well acquainted with the general problem of prejudice toward the Negro.

Three sets of criteria were used for purging the list of items: (*a*) Wang's (41) criteria for writing attitude statements; (*b*) Eysenck's (14) verdict concerning the use of double-barreled statements, logically "ambiguous" statements, and so on; and (*c*) our own criterion of understandability, that is, simplest language. The application of these criteria reduced the original list to 184 items.

For purposes of editing, copies of this new list of 184 items were given to a group of four individuals familiar with the over-all problem of prejudice toward the Negro. The result of this step yielded 140 statements of opinion thought to be adequate for the Thurstone analysis.

#### 2. *Application of the Thurstone-Chave Technique*

The 140 statements of opinion finally chosen as a result of the initial selection procedures were then treated according

to the Seashore and Hevner (34) modification of the Thurstone-Chave (39) method of equal-appearing intervals. One hundred and eighteen graduate students in psychology at the University of Pennsylvania and Temple University acted as judges, rating each item along a nine-point continuum of intensity of attitude. Twenty-two sets of item ratings had to be discarded because of incompleteness; this left 96 complete sets of item ratings for the estimation of scale values and *Q*-values.

The frequency distribution of the 140 items revealed a range of scale values from 0.2 (very intense) to 8.8 (least intense), and a range of *Q*-values from 0.2 to 3.8, with a median value of 1.65.

With the exception of 13 items, all those items whose *Q*-values exceeded the median *Q*-value (1.65) for the entire distribution of items were rejected from further consideration. This left us with 83 items for the subsequent analyses. The reason for retaining the 13 items whose *Q*-values were in excess of the median *Q*-value was to insure a sufficient supply of items relating to certain of the areas defining the universe of content.

### 3. *Definition of Attitudinal Areas*

The 83 items retained after the Thurstone analysis were now subjected to a classification procedure designed to define the area or context to which the items pertained. The items were mimeographed in the form of a choice scale, the choices representing the various areas to which a given item might refer. The areas were defined as follows:

*a*) *Personality.* Any statement which refers to something about the personal character or nature of the Negro.

*b*) *Social relations.* Any statement which pertains to the relationships of Negroes to whites, or to the interaction of Negro rights and desires, in a social sense, with the white majority group.

*c*) *Civil rights.* Any statement which pertains to privileges more or less sanctioned by law.

*d*) *Employment.* Any statement referring to Negro and white relations in the field of employment.

*e*) *Education and schools.* Any statement which refers to the relationship of the Negro to positions in educational institutions, or which refers generally to the Negro in the school situation.

*f*) *Housing.* Any statement which relates the Negro to matters of shelter, living conditions, and so on.

These area judgment scales were distributed to 14 graduate students in psychology at the University of Pennsylvania, who were instructed to classify each item according to the area to which they believed it belonged.

The frequency of judgments for each item in each of the areas was tabulated, and each item was then classified as belonging to a given area if it had the consensus of the judges. An examination of these tabulations disclosed that with few exceptions, the items were classified as to area on the basis of ten or more judgments.

### 4. *Application of the Likert Technique*

After the items had been clearly defined as to area, five answer-categories were assigned to each item in accordance with the demands of the Likert (25) technique. The answer categories ranged in every instance from "Strongly Agree" to "Strongly Disagree," with intermediate categories of "Agree," "Undecided," and "Disagree."

The 83 items were then distributed as a scale to 273 advanced college students taking courses in psychology, education, sociology, engineering, business and commerce, and so forth, during the 1948 summer session at the University of Pennsylvania. Of these 273 distributed questionnaires, 268 were returned in suitable condition for further analysis. The scale was scored on the basis of the weights

attached to the five answer-categories (scores 1 through 5, where a low score signified an unfavorable response, and a high score a favorable response).

A plot of the distribution of total scale scores obtained from the sample of 268 respondents revealed a range of 88 to 322, which entailed 70.5 per cent of the total possible range of scores (83 to 415). An examination of this plot also disclosed that the distribution was somewhat skewed to the left, with the median falling at the high-score range—indicating, thereby, a prevailing favorable attitude toward the Negro by this standardization group.

The item analysis took the form of determining how well the scale items differentiated between criterion groups based on total scores. The extreme lower and upper groups of 40 respondents (upper and lower 15 per cent) were selected on the basis of total scores. The point score separation between the highest score of the low criterion group and the lowest score of the high criterion group was 109. For each of the groups, tabulations were made of the response frequencies of the answer categories for each item. As the index of item discrimination, the phi-coefficient of correlation was used. The dichotomization of items in every case was made by combining answer categories with score values of 1,

TABLE 1

ITEMS OF SCALE A, AND ACCOMPANYING STATISTICAL DATA

| Item No. | Statement | Area* | Scale Value | Precision (*Q*-Value) | Discriminability ($\phi$-Value) |
|---|---|---|---|---|---|
| 19 | The lynching of Negroes for the crime of rape is justified. | CR | 0.4 | 0.6 | .523 |
| 43 | Negroes would likely prove disloyal to our country in the event of another war. | P | 0.6 | 0.7 | .337 |
| 44 | It is right that white job applicants be given preference for civil service jobs. | E | 0.8 | 1.1 | .655 |
| 35 | Negroes should not enjoy the same voting privileges as whites, especially in the South, because they do not know how to use this right. | CR | 1.0 | 0.9 | .643 |
| 48 | Negroes should not be allowed to mix socially with whites. | SR | 1.2 | 1.1 | .900 |
| 17 | Negroes ought to be admitted to separate wards in hospitals. | SR | 1.4 | 1.6 | .951 |
| 20 | It is better that public restaurants not employ Negro cooks. | E | 1.5 | 1.5 | .461 |
| 24 | It would be a good idea to keep Negroes out of white neighborhoods. | H | 1.8 | 1.6 | .920 |
| 33 | White colleges which do not use Negro professors are justified in this position. | ED | 2.0 | 2.1 | .870 |
| 49 | Where there is segregation, the Negro section should have the same equipment in paving, water, and electric light facilities as are found in white districts. | H | 7.3 | 1.8 | .229 |
| 29 | The Negro has a special contribution to make to American life and should be given every chance to do so. | P | 8.2 | 1.1 | .350 |
| 40 | Negroes should be allowed to enter any university they choose. | ED | 8.4 | 1.2 | .539 |
| | Mean | | | 1.28 | .615 |

* The letter symbols in this column are to be interpreted as follows: *P*, personality; *E*, employment; *ED*, education and schools; *H*, housing; *SR*, social relations; and *CR*, civil rights.

TABLE 2

ITEMS OF SCALE B, AND ACCOMPANYING STATISTICAL DATA

| Item No. | Statement | Area* | Scale Value | Precision (*Q*-Value) | Discriminability ($\phi$-Value) |
|---|---|---|---|---|---|
| 39 | In communities where Negroes outnumber the whites, lynching can be justified as punishment for brutal crimes against white women. | CR | 0.5 | 0.5 | .655 |
| 6 | The only thing that Negroes respect is brute force. | P | 0.6 | 0.9 | .500 |
| 23 | Negroes should be given only such jobs as are supervised by whites. | E | 0.8 | 0.9 | .352 |
| 42 | The southern states are justified in requiring Negroes to pay a voting tax before they can become voters. | CR | 1.0 | 1.5 | .562 |
| 4 | Organizations such as the Elks, Rotarians, Knights of Columbus, Masons, etc. ought not allow for membership both Negroes and whites. | SR | 1.2 | 1.6 | .837 |
| 10 | Negroes should not be permitted to patronize night clubs. | SR | 1.4 | 1.2 | .823 |
| 36 | The practice of paying Negro teachers less than white teachers is justifiable. | E | 1.6 | 1.3 | .395 |
| 8 | Negroes in the army should not be housed in the same barracks as white troops. | H | 1.9 | 1.9 | .930 |
| 28 | The older the Negro boy, the more important it is that he go to a Negro school. | ED | 2.4 | 2.2 | .750 |
| 37 | Negro tenants should have the same rights to rent an apartment in a public housing project as do whites. | H | 7.8 | 1.7 | .883 |
| 22 | Negroes should be regarded the same as any other group. | P | 8.2 | 1.2 | .629 |
| 11 | The Negro should be given the same educational advantages as the white man. | ED | 8.4 | 1.0 | .378 |
| | Mean | | | 1.33 | .641 |

* The letter symbols in this column are to be interpreted as follows: *P*, personality; *E*, employment; *ED*, education and schools; *H*, housing; *SR*, social relations; and *CR*, civil rights.

2, and 3, and categories with score values of 4 and 5. The computation of the large number of phi-coefficients was greatly facilitated by the use of a set of tables devised by Jurgensen (24), and the significance of the coefficients was approximated by using the tables prepared by Guilford (21; see also, 22, 24).

The results of this analysis disclosed that 5 items did not significantly differentiate (.05 level of confidence) the criterion group; these items were therefore rejected from any further consideration. The remaining 78 items yielded phi-coefficients which ranged from .23 to .95, all of which were at least significant at the .05 level of confidence.

The 32 items finally chosen for scale inclusion were again subjected to an item analysis. In this analysis, the criterion groups were drawn from the educated and uneducated samples used in the investigation proper. Table I in Appendix B presents the data of this analysis. It will be observed from an examination of the size of the phi-coefficients of correlation given in Table I that the items retain a high degree of discrimination.

The final step of the scale construction procedures consisted in selecting three sets of 12 items each as follows:

*a*) Two scales (Forms A and B) of 12 items each, in which the respective items were *matched*

TABLE 3

ITEMS OF SCALE I, AND ACCOMPANYING STATISTICAL DATA

| Item No. | Statement | Area* | Scale Value | Precision (*Q*-Value) | Discriminability ($\phi$-Value) |
|---|---|---|---|---|---|
| 44 | It is right that white job applicants be given preference for civil service jobs. | E | 0.8 | 1.1 | .655 |
| 42 | The southern states are justified in requiring Negroes to pay a voting tax before they can become voters. | CR | 1.0 | 1.5 | .562 |
| 16 | The Negro is generally a shiftless person. | P | 1.2 | 1.4 | .631 |
| 27 | White men should not have to work with Negroes. | E | 1.4 | 1.5 | .684 |
| 46 | In general, it is a good thing that Negroes are not elected to political office in proportion to their number in the general population. | CR | 1.6 | 1.6 | .870 |
| 24 | It would be a good idea to keep Negroes out of white neighborhoods. | H | 1.8 | 1.6 | .920 |
| 32 | Negroes should have separate swimming facilities. | SR | 2.0 | 1.6 | .900 |
| 25 | After you have educated the Negro to the level of the white man, there will still be an impassable gulf between them. | P | 2.2 | 2.3 | .880 |
| 28 | The older the Negro boy, the more important it is that he go to a Negro school. | ED | 2.4 | 2.1 | .750 |
| 37 | Negro tenants should have the same rights to rent an apartment in a public housing project as do whites. | H | 7.8 | 1.7 | .883 |
| 22 | Negroes should be regarded the same as any other group. | SR | 8.2 | 1.2 | .629 |
| 40 | Negroes should be allowed to enter any university they choose. | ED | 8.4 | 1.2 | .539 |
| | Mean | | | 1.56 | .742 |

* The letter symbols in this column are to be interpreted as follows: *P*, personality; *E*, employment; *ED*, education and schools; *H*, housing; *SR*, social relations; and *CR*, civil rights.

for scale value, precision (*Q*-value), and discrimination (phi-coefficient value).

*b*) One scale (I-scale) of 12 items which exhibited the best possible continuum of scale values, the lowest possible *Q*-values, and the highest possible phi-coefficients of correlation.

In each of the three scales the six areas defining the universe of content were represented by 2 items each, thereby setting the number of items for each scale at 12.

Tables 1, 2, and 3 present the three scales finally selected as a result of the item selection and analysis procedures. The data relevant to item area, scale value, *Q*-value, and phi-coefficient of correlation are given to the right of each item in the tables. In scale Forms A and B it will be noted that the mean *Q*-values and the mean phi-coefficients closely approximate each other, indicating the extent of effectiveness achieved in the matching of items for the two forms.

### 5. *Reliability of the Scales*

To estimate the reliability of the scales, the results obtained from the two experimental groups in the investigation proper were used. Moreover, an estimate of reliability was obtained by correlating only the alternate-form scales (A and B). Thus, for the educated sample of respondents, the reliability coefficient was +.90, and for the uneducated sample, +.91. It should be observed that both coefficients are rather high considering the fact that the scales contain only 12 items each;

this again may reflect the effectiveness of the scale development procedures. Reliability of the I-scale was not computed, since it is known that the items of this scale are very precise (low $Q$-values) and very discriminating (high $\phi$-values). In addition, six of the items in the I-scale were also contained in the Forms A and B scales. It can be safely assumed, therefore, that the reliability of the I-scale is at least equal to that for the A- or B-scale, and more likely in excess of that value.

### 6. *Design of the Questionnaire*

The 36 items which comprise the three scales were set in random order and offset-printed in booklet form. Interspersed among the 36 items were a number of "dummy" statements; these were of essentially the same character as the scale items except for the factor that the subject of each referred to issues not under investigation. For example, there were statements about Jews, atheists, religion, and the like. These "dummy" items were intended to serve the purpose of confusing the respondent as to the exact subject group under study. Experience has indicated that many respondents to attitude scales designed to poll single issues tend to stereotype their answers. This tendency, it was believed, could be partially overcome by the simple device of including unrelated items to break any such predisposition toward stereotyped responding. The items also served as a check against those who did not take seriously the task of expressing their opinions, since there was enough variability in the issues being polled to evoke something other than a consistent answer-category response for all the items. This fact, coupled with the length of time taken to complete the questionnaire schedule, served as a check on the "honesty" of the respondent's efforts.

Appendix A reproduces the complete questionnaire schedule.

## B. Collection of the Data

### 1. *The Sample*

Studies in the field of attitudes are frequently subject to the criticism of accidental, as contrasted with systematic, sampling methods. On the other hand, there are frequent occasions when accidental forms of sampling are not only suitable to the purposes of the investigation, but are desirable and the only kind feasible. For example, strictly methodological studies, wherein problems of sampling are not crucial, often find this kind of sampling adequate. Also, it often happens that we have no need to generalize our conclusions to the total population, in which case the added expense and labor of selecting random or stratified samples are unwarranted.

*a) Choice of educational-level samples.* The two groups investigated here consisted of 350 relatively uneducated persons and 350 persons of relatively high educational status. Respondents were classified as uneducated or educated on the basis of their conformance to the following definitions:

*Uneducated.* Those persons who had no formal school training or had formal schooling not in excess of eight grades.

*Educated.* Those persons who had one or more years of college training or its equivalent. This classification embraces those persons who did not receive a college degree, those who did receive a college degree, and those who had graduate training; it also contains persons with professional training or with special training which required at least high school graduation for entrance, e.g., nurses, laboratory technicians, business men, and so on.

The interval of a minimum of five years of formal education that exists between the two groups was not decided upon arbitrarily. It was recognized that the greater the disparity between the two

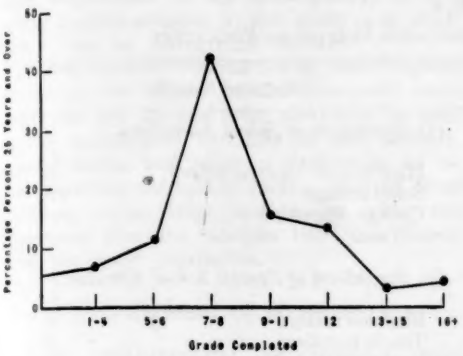


FIG. 1. Distribution of Educational Level Attained by White Persons 25 Years or Over in Metropolitan Philadelphia (U.S. Government Census Figures of 1940)

educational groups, the more meaningful would be the conclusions drawn. The ideal situation would have obtained if the uneducated group had had no formal training whatever and if the educated group had been limited to college graduates. Practical considerations, however, did not allow for such an approach to the selection of the sample groups. As an aid to setting the limits of education for the two groups, the distribution of educational status for white adults in the Philadelphia metropolitan area was plotted, and from this distribution the educational levels for the upper and lower quartiles were determined. The plot of this distribution is shown in Figure 1. The median educational level for white adult Philadelphians is approximately 8 grades of elementary school. The lower quartile of the distribution sets the educational level at about 6 grades, and the upper quartile approximately 11 grades.

Practical difficulties of obtaining a large uneducated sample of respondents with six or less grades of schooling necessitated an increase of the upper limit for this group to eight grades. On the other hand, the element of extensive contacts with well-educated groups made it feasible to increase the lower limit of the educational group to one year of college. In both instances the cutting points were shifted by two years. In the uneducated group the parent population was extended so as to include approximately 50 per cent of the white adults in the Philadelphia area; and in the educated sample the parent population was restricted so as to include approximately 7 per cent of the white adults.

Table 4 gives the composition of the 350 uneducated respondents and the 350 educated respondents from the standpoint of their level of educational attainment. For the uneducated respondents, Part 1 of the table indicates that the mean number of grades completed is about 7.5. The cut of grade levels for the uneducated sample also shows that only 2 per cent of the group had less than four grades of formal training. Turning now to Part 2 of Table 4, we note that approximately 50 per cent of the educated sample were college graduates and that approximately two-thirds of the remaining respondents had some college training. It may be concluded from these facts that the disparity between the two educational groups was even more than anticipated. This conclusion is further strengthened by the data presented in Part 3 of Table 4. Thus, it will be observed that approximately 40 per cent of the educated sample had attended professional or graduate schools; another 20 per cent had completed nurse or teacher training.

*b) Size of the sample.* To obtain the two samples of 350 cases each, matched on five variables, approximately 2100 questionnaire schedules were gathered. Of this number, about 700 were rejected for reasons of incompleteness, late returns, nonconformance to the educa-

TABLE 4

COMPOSITION OF EDUCATED AND UNEDUCATED SAMPLES ON EDUCATION

Uneducated Sample

(1) *Distribution of Grades Completed*

| Grade Completed | *f* |
|---|---|
| 0 | 5 |
| 1 | 0 |
| 2 | 0 |
| 3 | 3 |
| 4 | 15 |
| 5 | 14 |
| 6 | 35 |
| 7 | 57 |
| 8 | 221 |
| Total | 350 |
| Mean | 7.65 |
| $SE_M$ | 0.078 |
| *SE* | 1.65 |
| *SD* | 0.055 |

Educated Sample

(2) *Breakdown of School Attendance*

| | *f* |
|---|---|
| High school—special school | 59 |
| Some college | 115 |
| College degree | 176 |
| Total | 350 |

(3) *Breakdown of Special School Attendance*

| | *f* |
|---|---|
| Business college | 48 |
| Teachers college | 38 |
| Vocational school | 14 |
| Nurses training | 38 |
| Professional or graduate | 145 |
| None | 67 |

tional criteria, stereotypy, and so forth.

*c) Composition of the samples.* In order to rule out any possible differential effects between groups due to age heterogeneity, sex, marital status, nativity, and religious preference, these variables were controlled by means of sample-matching. The results of this work are presented as follows:

(1) *Age.* Reference is made to Table II in Appendix B, which gives the frequency breakdowns on the age variable for the two samples. It will be observed that the subjects ranged in age from 18 years to over 70 years, the mean age of the samples being 42.8 years. The variability for all samples is about the same, namely, 12.3 years.

It may be well to raise at this point the matter concerning age heterogeneity and its effect upon factor analysis work. It is generally recognized in such work that the correlated population should be relatively homogeneous with respect to age (and, in some instances, to other factors, such as sex, race, cultural background, and so forth). From the distribution of age in our samples, it is clearly evident that there is much heterogeneity. It follows, then, that it must be determined beforehand what effects, if any, this heterogeneity will have on the subsequent factor solution of this study. To test the effects of age, biserial coefficients of correlation were computed for each of the items of the three scales for each of the total samples. The continuous variable was the distribution of age as given in Table 3, Appendix B; the dichotomous variable consisted of the combined response-categories of "Strongly Disagree," "Disagree," and "Undecided," on the one hand, and "Agree" and "Strongly Agree," on the other hand. Table 5 presents a part of the results of this analysis. The mean biserial coefficient of correlation for all items of the three scales is shown in the extreme right-hand column of Table 5. It will be noted from these results that the extent of correlation between groups of respondents is small indeed. It can be concluded, therefore, that the amount of vari-

TABLE 5

MEAN BISERIAL COEFFICIENTS OF CORRELATION BETWEEN AGE AND ITEM RESPONSE FOR EDUCATED AND UNEDUCATED SAMPLES

| Sample | Scale | | | Mean M bis-r |
|---|---|---|---|---|
| | A | B | C | |
| Educated | −.092 | −.083 | −.098 | −.091 |
| Uneducated | −.015 | −.064 | −.098 | −.059 |

ance attributable to age heterogeneity in any factor analysis solution in this study is so small that it can be disregarded entirely.

(2) *Sex, nativity, marital status, and religious preference.* By means of the chi-square technique the two samples were compared on each of the background variables of sex, nativity, marital status, and religious preference. In no case were the chi-square values (ranging from 0.280 to 0.952) large enough to reject the hypothesis that our samples had been drawn from the same population.

### 2. *Procurement of Respondents*

The procurement of subjects was effected by several means. By and large the great majority of subjects was obtained through the cooperation of various kinds of organizations throughout the Philadelphia metropolitan area, e.g., political, civic, religious, social, industrial, labor, and like groups. Other methods included personal interviewing and a mail campaign. The procedures used may be briefly outlined as follows:

*a*) *Group methods.* Lists were obtained of a large number of business, social, religious, educational, civic, political, industrial, professional, labor, patriotic, and other organizations in the Philadelphia area. These lists were examined with an eye to dividing them into two broad groups on the basis of the average educational level of the members. Where the membership was predominantly of high school education, the lists were discarded. Variables such as religious affiliation (a control variable for matching) contributed to the reduction of the lists of prospective groups. For example, the samples were designed to include approximately 20 per cent Jews; there were, however, numerous Jewish organizations, and since experience has shown that Jewish organizations are very cooperative in investigations of racial attitudes, a large number of such groups were eliminated from the data collection plan. The same rationale was applied with respect to such matters as sex composition of an organization, the age range of members, nativity, and the like.

From a list of about 600 organizations, reclassification in terms of type of organization was made. Random samples were then drawn, and contact was made by mail, telephone, or personal visit. Regardless of the kind of contact made, the initial approach for soliciting cooperation was about the same: namely, a brief outline was given of the purposes of the study, the nature of the obligation to be assumed by the group, and similar matters.

*b*) *Personal interview methods.* Again, the same considerations discussed above applied here. In this instance, maps which detailed the populational characteristics for the Philadelphia area were studied in order to determine the best sections of the city (from a sampling point of view) for purposes of polling. A trained interviewer was sent into a number of these areas to do house-to-house polling.

*c*) *Mail returns.* In one case, the collection of data was accomplished through a mail campaign. This method presented the only means by which data could be collected from an organization whose members met only infrequently. Thus, from a list of the membership of the organization, a random sample was drawn. Each member of this sample was sent a self-addressed questionnaire, a set of instructions, and a letter from the president of the organization requesting cooperation.

### 3. *Administration of the Questionnaire*

All interviewers associated with this investigation were carefully briefed as to the desired procedures of administering the questionnaire schedule. The following steps outline the procedures used for group administration:

*a*) A brief talk was given covering: (1) the nature of the study, (2) the scientific approach to the study, i.e., the results were not to be used by the organization of which the respondents were members, and (3) the availability of results in a scientific journal when the study was completed. A short question-period was then allowed.

*b*) Questionnaires were distributed. The interviewer read the first page of the questionnaire schedule along with the group as a means of emphasizing the material. The subjects then proceeded to fill in the questionnaires.

*c*) When the group finished, the questionnaires were collected, and the session was concluded by a brief "thank you" speech.

In cases where house-to-house polling was done, the procedure was somewhat different from that described for group work. In no case did the interviewer himself record the responses to the questionnaire items. Instructions were given to the participating householder, and the interviewer left the premises for a sufficient length of time to allow the inter-

viewee to fill in the schedule. A return call was made to pick up the completed form.

The matter of insuring anonymity of responses was considered of especial importance. Much effort was expended on both the design of the questionnaire schedule and on the procedures of administration to assure respondents of this fact. A glance at the questionnaire form reproduced in Appendix A will reveal the nature of the measures taken with regard to the design of the booklet. Thus, it will be noted that references are repeatedly made to the matter of anonymity. Moreover, the booklet had a special glued flap and instructions to the respondent to seal the booklet when he had answered all the questions. In the course of administering the questionnaire schedule, great emphasis was laid upon the fact that names, addresses, and other forms of respondent identification were not desired.

## Chapter III

## ANALYSIS OF THE DATA

### A. The Distribution Analysis

For purposes of answering questions relating to differences between the two experimental groups in the extent of prejudice, in item-responses and the like, frequency distributions were made of (*a*) responses to I-scale items for both educated and uneducated respondents and (*b*) total scores on the I-scale for both groups of subjects. These distributions are given in Tables 6 and 7, respectively.[1] It is to be noted that, for all the distributions, item answer-categories were combined—answer categories 1, 2, and 3 were combined for a score of 1, and categories 4 and 5 were combined for a score of 2. A high item-score in every case implies a favorable response, whereas a low score means an unfavorable answer. A detailed discussion of these results of the distribution analysis will be given in Chapter IV.

TABLE 6

Frequency Distributions of Total Scores for Educated and Uneducated Groups on Scale I

| Score | Educated Group | Uneducated Group |
|---|---|---|
| | *f* | *f* |
| 24 | 79 | 19 |
| 23 | 37 | 8 |
| 22 | 34 | 7 |
| 21 | 30 | 13 |
| 20 | 34 | 27 |
| 19 | 24 | 22 |
| 18 | 24 | 35 |
| 17 | 24 | 31 |
| 16 | 26 | 25 |
| 15 | 11 | 32 |
| 14 | 17 | 27 |
| 13 | 4 | 47 |
| 12 | 6 | 55 |
| *N* | 350 | 350 |
| Mean | 20.12 | 16.31 |
| Median | 20.16 | 15.56 |
| *SD* | 3.38 | 3.53 |

[1] The numeric designations of the items in Tables 6 and 7, and all succeeding tables, differ from those used in the original questionnaire schedule. The following code is supplied: 1 = 16, 2 = 22, 3 = 24, 4 = 25, 5 = 27, 6 = 28, 7 = 32, 8 = 37, 9 = 40, 10 = 42, 11 = 44, and 12 = 46.

### B. The Factorial Analyses

In applying any one of the many methods of factor analysis to a problem of the kind investigated here, the first step consists in obtaining a matrix of intercorrelations among all the scale items. In the present case, tetrachoric coefficients of correlation between all the items of the I-scale were calculated for each of the two experimental groups (educated and uneducated respondents). To facilitate the calculation of these coefficients of correlation, the Thurstone (7) computing diagrams were used. Table 8 presents the intercorrelations of

TABLE 7

Frequencies of Unfavorable Responses to Scale Items for Educated and Uneducated Groups*

| Item *j* | Educated | Uneducated |
|---|---|---|
| 1 | 102 | 202 |
| 2 | 59 | 147 |
| 3 | 201 | 292 |
| 4 | 171 | 263 |
| 5 | 51 | 164 |
| 6 | 71 | 213 |
| 7 | 185 | 292 |
| 8 | 146 | 245 |
| 9 | 71 | 191 |
| 10 | 80 | 167 |
| 11 | 45 | 188 |
| 12 | 174 | 263 |

* To conserve space, favorable-response frequencies have been omitted. To obtain the favorable-response frequency for any item, subtract the given unfavorable-response frequency from 350.

TABLE 8

INTERCORRELATIONS OF TWELVE SCALE ITEMS*

| Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EDUCATED GROUPS | | | | | | | | | | | |
| 1 | | | | | | | | | | | | |
| 2 | 60 | | | | | | | | | | | |
| 3 | 63 | 57 | | | | | | | | | | |
| 4 | 61 | 66 | 75 | | | | | | | | | |
| 5 | 50 | 36 | 52 | 50 | | | | | | | | |
| 6 | 56 | 53 | 63 | 64 | 31 | | | | | | | |
| 7 | 61 | 62 | 77 | 74 | 71 | 78 | | | | | | |
| 8 | 48 | 56 | 72 | 62 | 40 | 57 | 70 | | | | | |
| 9 | 49 | 33 | 63 | 64 | 68 | 69 | 78 | 48 | | | | |
| 10 | 53 | 36 | 50 | 47 | 44 | 54 | 57 | 43 | 53 | | | |
| 11 | 56 | 43 | 61 | 70 | 60 | 58 | 85 | 64 | 58 | 40 | | |
| 12 | 55 | 45 | 67 | 71 | 60 | 63 | 80 | 55 | 62 | 53 | 84 | |
| | UNEDUCATED GROUP | | | | | | | | | | | |
| 1 | | | | | | | | | | | | |
| 2 | 50 | | | | | | | | | | | |
| 3 | 65 | 45 | | | | | | | | | | |
| 4 | 62 | 53 | 82 | | | | | | | | | |
| 5 | 64 | 67 | 80 | 68 | | | | | | | | |
| 6 | 65 | 55 | 77 | 54 | 87 | | | | | | | |
| 7 | 56 | 49 | 70 | 67 | 50 | 68 | | | | | | |
| 8 | 44 | 56 | 57 | 51 | 44 | 44 | 67 | | | | | |
| 9 | 60 | 60 | 60 | 58 | 66 | 73 | 70 | 58 | | | | |
| 10 | 51 | 54 | 62 | 54 | 64 | 60 | 62 | 31 | 51 | | | |
| 11 | 59 | 62 | 50 | 50 | 81 | 76 | 69 | 37 | 70 | 70 | | |
| 12 | 62 | 53 | 74 | 57 | 60 | 61 | 66 | 52 | 58 | 61 | 63 | |

* Decimals properly preceding each entry have been omitted.

the 12 items of the I-scale for the educated and uneducated groups, respectively. The intercorrelations among items for both groups are generally high, and all are positive.

It will be recalled that the hypothesis to be tested in the course of this investigation relates to the factorial composition of the I-scale as a function of the educational level of respondents. The present analysis of the item intercorrelations took two forms: namely, a factor analysis according to Spearman's theory of two factors, and a Thurstone multiple-factor analysis.

### 1. *The Spearman Factor Analysis*

According to Spearman's theory of two factors, each ability—as, for example, intelligence—can be resolved into two factors: one factor, called *s*, is specific to the particular ability, and the other, called *g*, is general to all known abilities (36). To relate this concept of factors to the present context, the hypothesis of this investigation states that the uneducated respondents' responses to the items of the I-scale show greater generality; if this condition actually obtains, one alternative is to attribute this generality to a single factor running through all the items (a factor which may arbitrarily be termed "prejudice").

To test whether only two factors (*g* and *s*) are present to account for the covariation of the items, Spearman's (36) tetrad-difference criterion must be used. If the distribution of all possible tetrad differences contained in a given matrix of intercorrelations is normal and results only in differences attributable to sampling errors, then the hypothesis of the

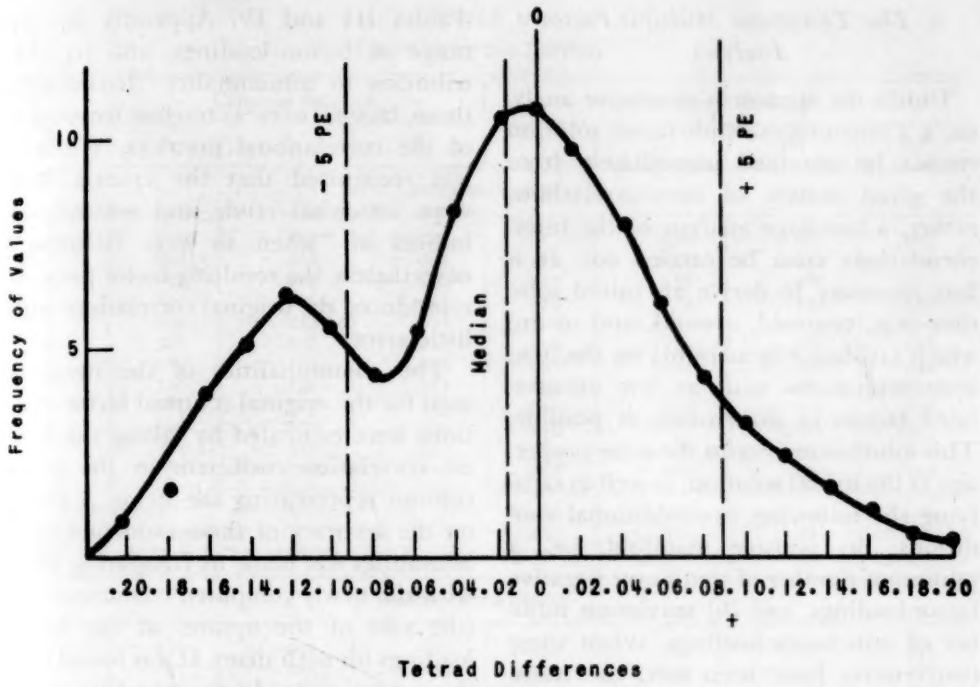
0
10
5
- 5 PE
+ 5 PE
Median
Frequency of Values
.20. 18. 16. 14. 12. 10. 08. 06. 04. 02 0 .02. 04. 06. 08. 10. 12. 14. 16. 18. 20
+
Tetrad Differences
Median Tetrad Difference = .017
Probable Error Median Tetrad Difference = .018

FIG. 2. Distribution of a Random Sample of 100 Tetrad Differences

presence of two factors is tenable.

In the present study a test was made of the hypothesis of two factors for the data concerning uneducated respondents. The item intercorrelations of Table 8 were arranged in hierarchical order, and a random sample of 100 tetrads was drawn. The tetrad differences were then calculated, and their distribution is shown in Figure 2. The median tetrad-difference was found to be .017, and the average value of the probable error of the tetrad differences was .018.[2] The distribution of tetrad differences is seen to be bimodal and definitely nonnormal. Moreover, there are considerable areas of the distribution which lie beyond $\pm 5$ *PE*. It was concluded, therefore, that the correlation between items could not be accounted for on the basis of the two-factor theory; rather, the presence of group factors was revealed.

No further analysis of the data by means of Spearman's two-factor theory was undertaken. Moreover, it was not considered profitable to test the correlation matrix for educated respondents; this omission was later justified by the outcomes of the multiple-factor analysis.

[2] The formula (37) used for the calculation of the mean probable error for a group of tetrad differences was:

$$1.349\ \sqrt{N}\,[r^2(1-r)^2+(1-R)s^2]^{\frac{1}{2}}$$

where $N$ = the number of subjects, $r$ = the mean of all $r$'s contained in the matrix, $s$ = the mean squared deviation from 4, $R = 3r[(\frac{n-2}{n-2}) + 2r^2(\frac{n-6}{n-2})]$, and $n$ = the number of items.

### 2. *The Thurstone Multiple-Factor Analyses*

Unlike the Spearman two-factor analysis, a Thurstone multiple-factor solution cannot be obtained immediately from the given matrix of intercorrelations; rather, a two-stage analysis of the intercorrelations must be carried out. It is first necessary to derive an initial solution (e.g., centroid, averoid, and so on) which satisfactorily accounts for the item intercorrelations with as few uncorrelated factors or dimensions as possible. This solution maintains the same properties as the initial solution, as well as satisfying the following two additional conditions: (*a*) positive manifold, i.e., a minimum number of significant negative factor-loadings, and (*b*) maximum number of zero factor-loadings. When these two criteria have been met, the transformed solution has what has been termed "simple structure," a condition deemed necessary for the meaningful interpretation of any multiple-factor solution (20, 38, 40).

In the present investigation the initial factor solutions for the educated and uneducated matrices of intercorrelations were obtained by means of Thurstone's (40) centroid method. To determine when to stop extracting factors, the following criteria were used: (*a*) comparison of the standard deviation of the factor residuals with the standard error of a zero coefficient of correlation[3] (see Tables III and IV, Appendix B), (*b*) range of factor loadings, and (*c*) contribution to communality. Accordingly, three factors were extracted from each of the correlational matrices. While it was recognized that the criteria used were somewhat crude and arbitrary as indices of "when to stop factoring," nevertheless, the resulting factor patterns reproduced the original correlations with little error.

The communalities of the items as used for the original centroid factor solutions were estimated by taking the largest correlation coefficient in the given column representing the items. A check on the accuracy of these estimated communalities was made by comparing them with the newly computed communalities (the sum of the squares of the factor loadings for each item). It was found that there were some discrepancies in excess of .10. The original correlational matrices were refactored, and this time the computed communalities from the first factor analysis were used. The results of this reanalysis of the data were taken to be satisfactory in view of the achievement of greater stability of the communalities.

The final step of the factor analysis consisted in the transformation of the centroid solutions with the aim of achieving "simple structure." Rotation of axes was carried out graphically, two at a time. The final factor loadings obtained from the rotations are given in the

[3] Residuals were considered significantly large for further extraction of factors if the *SE* of the distribution of residuals exceeded the *SE* for a zero tetrachoric correlation coefficient when the cut is approximately 50-50. The standard error of a zero tetrachoric for these data was .05 (i.e., $1/\sqrt{349}$). A comparison of this value with the standard deviations of the third-factor residuals for educated and uneducated groups—0.039 and 0.043, respectively—indicated that no further factors needed to be extracted. It should be noted that the abbreviated formula for calculating the *SE* of a tetrachoric correlation coefficient, which takes into account the extent of the dichotomous cuts, as given by McNemar (28, p. 178), was used for certain of the scale items. By and large, the standard errors reported for such cases were somewhat higher than the standard error given above (i.e., .05). Such standard errors were not used as criteria for determining "when to stop factoring," since the standard error of a zero coefficient provided a more rigorous test.

TABLE 9

LOADINGS OF THE FACTORS

| Item $j$ | Centroid Solution | | | "Rotated" Solution | | | |
|---|---|---|---|---|---|---|---|
| | $k_1$ | $k_2$ | $k_3$ | I | II | III | $h_j^2$ |
| **EDUCATED GROUP** | | | | | | | |
| 1 | .723 | .157 | −.243 | .611 | .481 | .031 | .605 |
| 2 | .660 | .428 | −.091 | .424 | .622 | .244 | .627 |
| 3 | .837 | .229 | .092 | .647 | .438 | .387 | .761 |
| 4 | .840 | .191 | .053 | .670 | .424 | .330 | .738 |
| 5 | .674 | −.244 | −.095 | .720 | .064 | .013 | .522 |
| 6 | .777 | −.046 | −.118 | .731 | .275 | .088 | .618 |
| 7 | .957 | −.181 | .043 | .932 | .155 | .236 | .949 |
| 8 | .729 | .196 | .181 | .554 | .335 | .426 | .600 |
| 9 | .781 | −.325 | −.193 | .861 | .075 | −.074 | .752 |
| 10 | .623 | −.071 | −.250 | .619 | .258 | −.081 | .457 |
| 11 | .824 | −.147 | .357 | .764 | −.006 | .493 | .827 |
| 12 | .834 | −.221 | .226 | .818 | −.002 | .353 | .794 |
| Total variance | | | | 6.026 | 1.279 | .945 | 8.250 |
| Per cent total variance | | | | 50.20 | 10.70 | 7.90 | 68.80 |
| Per cent common factor variance | | | | 73.00 | 15.50 | 11.40 | 99.90 |
| **UNEDUCATED GROUP** | | | | | | | |
| 1 | .739 | .040 | .087 | .639 | .247 | .292 | .554 |
| 2 | .704 | −.184 | −.194 | .733 | .166 | −.048 | .567 |
| 3 | .873 | .327 | .351 | .610 | .423 | .663 | .991 |
| 4 | .773 | .261 | .154 | .569 | .417 | .438 | .690 |
| 5 | .877 | −.328 | .351 | .889 | −.125 | .440 | 1.000 |
| 6 | .850 | −.209 | .164 | .834 | .044 | .306 | .792 |
| 7 | .820 | .228 | −.298 | .675 | .596 | .032 | .812 |
| 8 | .643 | .261 | −.243 | .496 | .541 | .045 | .541 |
| 9 | .803 | −.072 | −.117 | .766 | .261 | .087 | .663 |
| 10 | .720 | −.133 | −.067 | .711 | .161 | .088 | .540 |
| 11 | .820 | −.415 | −.188 | .934 | .010 | −.089 | .880 |
| 12 | .778 | .136 | −.087 | .653 | .416 | .178 | .631 |
| Total variance | | | | 6.220 | 1.375 | 1.066 | 8.661 |
| Per cent total variance | | | | 51.80 | 11.50 | 8.90 | 72.20 |
| Per cent common variance | | | | 71.80 | 15.80 | 12.30 | 99.90 |

right-hand portion of Table 9. The communalities are given in the last columns of these tables and may be used as a check on the accuracy of the rotations, since they did not differ from the corresponding values computed from the centroid factor loadings.

## Chapter IV

## INTERPRETATIONS AND DISCUSSION OF RESULTS

### A. The Distribution-Analysis Results

Although the hypothesis posed at the outset of this investigation was formulated in terms of the factor analysis technique used, much useful and accessory evidence as to similarities and differences between educated and uneducated groups' attitudes toward the Negro can be gained by an examination of the distributions of total scores and the response breakdowns of the individual scale items. Turning our attention first of all to the frequency distributions of total scores as given in Table 6 (Chap. III*A*), we note the decided tendency for educated subjects to receive higher total scores than do uneducated subjects. The mean score for educated respondents is 20.13, whereas for the uneducated group the mean score is 16.31. The difference of 3.81 between the two experimental groups was found to be significant at the .001 level of confidence ($t = 14.65$). It should also be noted that the variability of scores for the two distributions is approximately the same—3.38 and 3.53.

A first conclusion to be derived from these data is that uneducated respondents tend to express greater hostility toward the Negro than do educated subjects. This conclusion will be seen to be further strengthened as the other data of the study are analyzed. It should be pointed out, however, that the mere examination of score distributions cannot disclose anything about the structure or organization of attitudes in the two experimental groups.

Table 7 (Chap. III*A*) presents the frequencies of responses to the scale items for educated and uneducated respondents. The inspection of these data reveals two important points: namely, (*a*) that educated and uneducated respondents tend to answer each item of the scale in a consistently opposing direction with regard to favorableness; and (*b*) that the first conclusion which was drawn from an analysis of total scores holds at the level of the individual items.

To test the first point concerning differences in the direction of response by the two experimental groups, a chi-square for each of the items was calculated; these chi-square values ranged in magnitude from 46.9 to 131.6. All chi-squares were found to be highly significant—.001 level of confidence.

Referring now to the second point of difference between the two groups, as disclosed by the item analysis—all the differences between the two groups were consistently in the direction of greater favorableness toward the Negro by the educated group as contrasted to consistent unfavorability on the part of the uneducated sample. In short, all items showed consistency of high-order discriminability for the two experimental groups, and this discrimination tended to be in the direction already indicated.

When the educated and uneducated samples' distributions of scale scores (as given in Table 6) were compared in terms of "overlapping," it was found that only 13 per cent of the uneducated group reached or exceeded the median (20.17) educated respondent. This outcome lends further support to the conclusion that educated respondents tend to show less hostility toward the Negro than do uneducated respondents.

Some preliminary conclusions concerning the patterning of attitudes toward the Negro can be drawn from an examination of the item analysis data given in Table 7 (Chap. III*A*). The order of frequencies of unfavorable responses to the scale items by the educated group was correlated with that of the uneducated group and found to be +0.89. The size of this correlation between orders of unfavorable item-responses by the two groups suggests that both experimental groups are reacting in essentially the same manner to the situations represented by the scale items, although not necessarily to the same extent. Thus, the items which evoke much hostility toward the Negro in the educated respondents also tend to do so in the uneducated subjects, but to a much greater extent in the latter instance. Likewise, those items which evoke least prejudice in the educated subjects also tend to evoke least prejudice in the uneducated respondents, but to a lesser extent than is true for the educated group.

A more revealing treatment in terms of the patterning of attitudes in these data can be made if the scale items are regrouped in terms of the areas of prejudice to which they refer, and if the relative frequencies of unfavorable responses by the two experimental groups are studied. Thus, instead of considering each of the items discretely as was done in the above discussion, each item characterizing a given area of prejudice may now be considered as a sample measure. In the present investigation, two items or sample measures were obtained for each of the areas in which prejudice toward the Negro was made manifest; consequently, if the mean of these sample measures is taken, one can infer that it is a more precise and reliable measure of prejudice in a given area than either of the two items taken separately. The rationale of this procedure is exactly the same as for measuring an attitude by means of single-question polling as against attitude measurement by means of a questionnaire.[1]

TABLE 10

FREQUENCIES OF UNFAVORABLE RESPONSES MADE BY EDUCATED AND UNEDUCATED GROUPS TO PAIRS OF ITEMS BELONGING TO PARTICULAR AREAS OF PREJUDICE INVESTIGATED

| Item $j$ | Item Area | Educated Group $f$ | Uneducated Group $f$ |
|---|---|---|---|
| 1<br>4 | Personality | 136 | 232 |
| 2<br>7 | Social relations | 124 | 219 |
| 3<br>8 | Housing | 173 | 268 |
| 5<br>11 | Employment | 48 | 171 |
| 6<br>9 | Education | 71 | 202 |
| 10<br>12 | Civil rights | 127 | 215 |

Table 10 shows the mean frequencies of unfavorable responses for each pair of items subsumed under a particular area of prejudice toward the Negro, for educated and uneducated respondents, respectively.

When the order of frequencies given in Table 10 for the educated group was correlated with the order for uneducated subjects, it was found to be +0.94. It is to be concluded from this outcome that, while the extent of apparent prejudice evoked by the items in the two experimental groups is different, the pattern of apparent prejudice for both groups is of essentially the same kind. However, one is not yet prepared to say what are the

[1] See also the use of this procedure in the interpretation of factors (Chap. IV*B*4).

determining factors or the number of such factors which underlie the responses made by the two groups to the scale items, since to do so implies knowing how the items covary for the two different groups of respondents. Thus, as will be pointed out subsequently, the ordering or patterning of attitudes as determined by means of factor analysis is somewhat different from the order of apparent prejudice as determined in the present context. We shall forego any explanation of this fact until the discussion of the factor analysis results.

Table 10 reveals, then, that both educated and uneducated respondents show greatest hostility toward the Negro in the areas of personality, housing, civil rights, and social relations; least hostility is indicated in the areas of employment and education. It should be understood that this conclusion is valid only to the extent that the scale items used in the present investigation were considered to be representative of the various areas in which prejudice toward the Negro is manifest.

To sum up, the findings of this part of the investigation clearly indicate that the extent of apparent prejudice, as revealed by total scale scores and a study of responses to the individual scale items, is significantly different for the two experimental groups. Moreover, the pattern of attitudes toward the Negro is of essentially the same order in both groups, although the data of this section are incapable of disclosing the underlying factors and their respective contributions. It should be further pointed out that no evidence can be educed from these data as to the tenability of the over-all hypothesis of this investigation, namely, differences in attitude generality between the two experimental groups.

## B. The Factor Analysis Results

### 1. *Some Remarks About the Centroid Factor Solutions*

It will be recalled that the hypothesis to be tested in the course of the present investigation concerned itself with the question of attitude generality in terms of the factorial structure that would obtain from "educated" and "uneducated" matrices of item intercorrelations. According to that hypothesis, greater generality would obtain for the uneducated group of respondents in terms of either (*a*) a lesser number of factors to account for the covariance of scale items (possibly a single general factor solution), or (*b*) higher item saturations in the event that the same factor pattern obtained for both groups. It is clear from the centroid solutions, as shown in the left-hand portion of Table 9 (Chap. III*B*2), that the basic hypothesis as reiterated above must be revised. Of course, it is realized that we are now speaking only of the centroid solution; consequently, any meaning that is attached to this solution must be viewed with some caution.

The centroid factor solutions revealed that for the two experimental groups a general factor emerged accounting for over 60 per cent of the total variance. Also, both solutions evidence the presence of two group factors which together in each solution account for approximately 20 per cent more of the total variance. Thus, the number and magnitude of factors which were extracted from the matrices of item intercorrelations for the two experimental groups are seen to be approximately equal; accordingly, some evidence of the untenability of the original hypothesis of the present study is afforded by these data.

The conclusion as to the similarity of

factor structure in the two experimental groups is further strengthened when one examines the item communalities of the centroid solutions. It will be noted that the total communality for the two groups is approximately the same, namely, 8.250 and 8.661. Translated to percentages of total variance accounted for by all the known factors, the percentage for both groups is about equal—educated, 68.8, and uneducated, 72.2. This difference in percentage of total variance contributed by all known factors in the two groups does not appear to be significant.[2]

### 2. *Rotation of Factor Axes to Simple Structure and Results Thereof*

With the knowledge that the original hypothesis of the investigation is at variance with the results of the centroid solutions, the central problem then becomes that of determining the extent of similarities and/or differences in the organization of attitudes in terms of factorial composition in the two experimental groups. On this basis—namely, that both centroid factor patterns displayed essential similarity in respect to number of factors and percentages of total variance accounted for by the factors—it followed that a test of the similarity of organization of attitudes could be made if the centroid solutions for each of the two experimental groups were subjected to the same conditions of "simple structure." That is, the question was whether the two centroid solutions could be rotated in the same manner so that the items (item vectors) could be said to lie in the same common factor space.

The test for this condition would have to be twofold, namely, (*a*) achievement of identical "simple structure" by rotating the two centroid systems in exactly the same way, and (*b*) correlation of the resulting factor loadings (item coordinates lying in the common factor space) for the two groups to determine whether each set of corresponding factor loadings for the two experimental groups lie in the same plane relative to the other planes of the rotated system.

The two sets of centroid factor loadings were satisfactorily rotated through the same number of degrees, after which procedure satisfactory "positive manifold" and maximization of zero loadings were achieved—that is, "simple structure." The new loadings of the factors for educated and uneducated groups are given in the right-hand portion of Table 9 (Chap. III*B*2).

TABLE 11

STANDARD DEVIATIONS OF FACTOR LOADINGS AND COMMUNALITIES

| Group | Factor | | |
|---|---|---|---|
| | I | II | $h^2$ |
| Educated | .185 | .115 | .134 |
| Uneducated | .181 | .115 | .163 |

An examination of the educated and uneducated samples' multiple-factor (orthogonal) patterns for the 12 scale items reveals a general factor which accounts for somewhat over 50 per cent of the total variance in both instances. Factor II appears in both groups as a group factor which accounts for slightly more than 10 per cent of the total variance. The third factor in each group is also a group factor and accounts for approximately 8 or 9 per cent of variance. To repeat, the contribution of all factors to the total variance (communality) is 68.8 per cent for the educated group and 72.2 per cent for the uneducated group. The variability of the individual item communalities, as well as

[2] There is no known test for the significance of differences between percentages of total variances.

of the first and second factors, for the two experimental groups is about the same. These are given in Table 11.

This equivalence of variability between factor saturations for the same set of items can be used as indirect evidence that the relative contributions of the factors underlying the items are substantially of the same order for both experimental groups.

In summary, the following points are clearly indicated in the results of the multiple-factor (orthogonal) solutions: (*a*) the same number of factors can be said to be operative in the determination of responses to the scale items in both experimental groups; (*b*) both multiple-factor solutions satisfactorily meet the demands of "simple structure" in the same way and to the same extent; (*c*) the data indicate that the relative contribution to the total variance by all known factors in both experimental groups is approximately of the same magnitude; (*d*) the relative contribution of each factor to the total variance in both experimental groups is approximately the same; and (*e*) the variability of the item communalities as well as the variability of the first and second factors in both groups is approximately the same.

### 3. *Organization of Attitudes*

The question now posed is this: Although the rotations for both educated and uneducated centroid solutions were the same in terms of meeting the criterion of "simple structure," are the factor loadings for both groups (which are really projections of the items upon the reference or factor axes) distributed throughout their respective common factor spaces in essentially the same manner? If the factor loadings do occupy the same relative positions in their respective common factor spaces, one has evidence that (*a*) the factors operating in structuring responses to the scale items are the same for both experimental groups, and (*b*) the structure or organization of attitude is the same for both groups.

It will be recalled from previous discussion (Chap. IV*A*) that there were six sets of two items each, and that each set of items characterized a given area in which prejudice toward the Negro is manifest.[3] It was reasoned in that discussion that the mean number of unfavorable responses for each set of items yielded a better estimate of the manifest prejudice toward the Negro in a given area than would obtain if the responses to single items of the given set were used. According to this same rationale, the mean saturation of a given factor in a given area of prejudice was considered to be a more stable measure than any of the single factor loadings which entered into the calculation of the mean. In the present investigation, the mean of each set of two-item factor loadings, each set of which defines a given area of prejudice toward the Negro, was used to designate the locations of the items (defining the best measures of areas of prejudice) in reference to the factor axes upon which they are projected.

The mean factor loadings for pairs of items characterizing areas of Negro prejudice for educated and uneducated groups are presented in Table 12.

To determine whether the organization of attitudes for the two experimental groups was similar, the first factor loadings as given in Table 12 were correlated and found to be +.91. Similarly, the second factor loadings were correlated with each other and found to be +.71. When the third factor loadings in

[3] Personality, 1 and 4; social relations, 2 and 7; housing, 3 and 8; employment, 5 and 11; education, 6 and 9; and civil rights, 10 and 12.

TABLE 12

MEAN FACTOR LOADINGS OF ITEMS CLASSIFIED BY AREAS OF PREJUDICE TOWARD THE NEGRO

| Item *j* | Item Area | Educated Group | | | Uneducated Group | | |
|---|---|---|---|---|---|---|---|
| | | Mean Factor Loadings | | | Mean Factor Loadings | | |
| | | I | II | III | I | II | III |
| 1<br>4 | Personality | .640 | .452 | .180 | .604 | .332 | .365 |
| 2<br>7 | Social relations | .678 | .388 | .240 | .704 | .381 | −.008 |
| 3<br>8 | Housing | .600 | .386 | .406 | .553 | .482 | .354 |
| 5<br>11 | Employment | .742 | .029 | .253 | .911 | −.057 | .175 |
| 6<br>9 | Education | .796 | .175 | .002 | .800 | .152 | .196 |
| 10<br>12 | Civil rights | .718 | .128 | .136 | .682 | .288 | .133 |

the two experimental groups were correlated, they were found to be +.09. The size of this coefficient of correlation suggests that the third factor in each of the groups is unique, i.e., different in each experimental group. However, since the third factor in both groups contributes less than 10 per cent of the total variance, no further treatment was accorded it. The magnitude of the two correlations between factors tends to support the following conclusions: (*a*) the factors responsible for structuring the responses to the scale items in both experimental groups are alike, and (*b*) the pattern of attitudes in both groups is strikingly similar. In short, one can conclude that, while the extent of apparent prejudice in the two experimental groups is disparate (as determined in the distributional analysis), the structure or organization of prejudice in the two groups is the same.

### 4. *The Interpretation of Factors*

To some extent, the adequacy of any obtained multiple-factor solution may be ascertained when an attempt is made to give "psychological" meaning to the factors. It should be pointed out, however, that in the present instance the hypothesis under test does not necessarily require for its acceptance or rejection reference to any psychological interpretation of factors; the test of the hypothesis has already been established in the course of treating the previously discussed data. In any case, it is perhaps of some interest to note what interpretation can be placed on the factor data and to what extent such an interpretation is coincident with the already established conclusions.

*Factor I.* Reference to Table 12 indicates the following dichotomy of factor loadings for the two experimental groups, the dichotomy being based on the magnitude of the loadings, i.e., the three highest loadings versus the three lowest loadings:

The first factor is, as can be seen from Table 13, a general one that has been

TABLE 13

DICHOTOMY OF AREAS OF PREJUDICE IN TERMS OF THE MAGNITUDE OF FIRST FACTOR LOADINGS

| Rank | Educated Group | Uneducated Group |
|---|---|---|
| | Area | Area |
| 1 | Employment | Employment |
| 2 | Education | Education |
| 3 | Civil rights | Social relations |
| 4 | Social relations | Civil rights |
| 5 | Personality | Personality |
| 6 | Housing | Housing |

termed "Threat." The dichotomy as established on the basis of the magnitude of loadings on this first factor tends to distinguish prejudice based on threat to ego status from prejudice based on threat to social status. For example, in the educated group the loadings are greatest in the areas of employment, education, and civil rights. These are areas in which the Negro has perhaps the greatest and most important meaning for the educated individual. In contrast, items with smallest loadings are in the areas of social relations, personality, and housing. These are areas, it may be argued, in which the Negro is most subject to social, civil, and over-all cultural restraint and in which, therefore, he holds less meaning insofar as the element of threat to the ego is concerned. Manifestly, prejudice in these latter areas may be due to threats to social superiority of the educated respondent.

The interpretation is somewhat analogous for the uneducated group. Here it will be noted that the areas of greatest prejudice are those concerning employment, education, and social relations. Least prejudice is manifest in the areas of civil rights, personality, and housing. It should be remarked, however, that the over-all differences between areas in terms of factor saturations, for both groups, are not strikingly great; for this reason, there is probably much overlap in the interpretation given the dichotomy. In any case, Factor I appears to entail the element of threat which may be ego-involved or socially involved.

*Factor II.* By using the same scheme of interpretation as for Factor I, the following dichotomy as shown in Table 12 can be made for Factor II.

Factor II, for the two groups, is a group factor that has been interpreted as one of "Contact." It will be noted from Table 14 that for both groups the same areas of prejudice toward the Negro are significant for interpretation purposes; these are the areas of personality, social relations, and housing. If one examines the situations (items) which comprise these areas, he will note that in all cases the element of *contact* between Negro and white is involved. Consequently, in addition to the factor of "threat," which has been stated to operate generally throughout all the items, the factor of unwillingness to come into close contact with the Negro is now conjectured to be operative in the structuring of response in the two groups. This interpretation of the second factor is partially strengthened by an

TABLE 14

DICHOTOMY OF AREAS OF PREJUDICE IN TERMS OF THE MAGNITUDE OF SECOND FACTOR LOADINGS

| Rank | Educated Group | Uneducated Group |
|---|---|---|
| | Area | Area |
| 1 | Personality | Housing |
| 2 | Social relations | Social relations |
| 3 | Housing | Personality |
| 4 | Education* | Civil rights* |
| 5 | Civil rights* | Education* |
| 6 | Employment* | Employment* |

* Loadings are not significant for interpretation.

examination of the loadings of items which comprise the areas listed in the latter part of the dichotomy, as given in Table 14, namely, civil rights, education, and employment. If one examines the items which comprise these areas (e.g., payment of voting tax, election of Negro candidates, white preference for jobs, etc.) one will see that the element of contact is indeed absent. In those items which manifestly do imply contact between whites and Negroes (e.g., whites working with Negroes, Negro boys going to separate schools, etc.), we note that Factor I, the factor of threat, appears as the main determining tendency, leaving little to be determined by the other known factors. Note, for example, that the mean loadings for both groups in the area of employment on the first factor are .742 for the educated and .911 for the uneducated; likewise, for the area of education the mean loadings are .796 for the educated group and .800 for the uneducated group.

In summary, the adequacy of the rotational procedures used to achieve identical "simple structure" for the two experimental groups has been shown in terms of a consonant psychological interpretation of the obtained factors. Factor I, a general factor, has been tentatively identified as Threat; Factor II, a group factor, has been provisionally identified as Contact. The factor patterns of both groups lend themselves to identical interpretations in terms of the obtained factors.

### 5. *Generality of Attitudes*

From the results of the centroid solution it was adduced that generality of attitudes toward the Negro, in terms of a single general factor running through all the items, did not obtain in either of the two experimental groups. The multiple-factor (orthogonal) solution, shown in Table 9 (Chap. III*B*2), does not contradict this previously stated conclusion. It is seen from Table 9 that for educated and uneducated subjects alike, a general factor which accounts for slightly more than 50 per cent of the variance is present. The remaining two group factors in the two experimental groups account for approximately 20 per cent more of the total variance. Notwithstanding the fact that a high-order general factor was extracted from both educated and uneducated correlational matrices, a difference in generality of the kind implied by the hypothesis of the present investigation and discussed in previous sections of this report (see Chap. I*D*2) cannot be said to have obtained for either of the two experimental groups. This much, however, can be asserted, namely, that a strong general determining tendency running through all the items for *the two experimental groups* was made manifest as a result of the final factor analysis procedures. This implies, then, that while the responses to some of the items may be due to certain group as well as specific factors, the responses to *all* items were structured to varying degrees by a strong general factor or dimension.

## C. Comparison of the Distribution-Analysis Results with the Factor Analysis Results

The results obtained from the distribution analysis tended to show: (*a*) the two experimental groups differed with respect to the extent of apparent prejudice, and (*b*) the ordering of the areas of prejudice was remarkably similar ($r = .94$). When the ordering of areas of prejudice, for the two experimental groups, was compared with the ordering of areas on the basis of the factor analy-

sis solution, it was found to be somewhat different. This fact was mentioned previously under the discussion of the results of the distribution analysis (See Chap. IV*A*). More exactly, the correlation between the order of areas of prejudice (in terms of the mean number of unfavorable responses to items belonging to any given area) and the order of areas as determined by the magnitude of the first factor loadings, for educated and uneducated groups, was found to be −.88 and −.93, respectively. These correlation coefficients confirm the judgment that items which are heavily saturated in the first factor—very "prejudicial"—tend to be endorsed only by respondents who are very prejudiced toward the Negro; such respondents are in a minority. In the present investigation, this is shown by the high negative correlations which were obtained when the orders of areas of prejudice were compared along the lines just discussed. For example, the area of personality received the greatest number of unfavorable responses according to the results of the distribution analysis, and in terms of the factor analysis results it ranked lowest for saturation in the first factor. The conclusion is drawn, therefore, that the outcomes of the distribution analysis are quite compatible with those of the factor analyses.

To sum up, when the results of the factor analyses are compared with the outcomes of the distribution analysis, it is discovered that there is essential consistency between them. The factor analyses revealed the nature of the organization of attitudes toward the Negro for the two experimental groups; thus, organization of attitudes was shown to be compatible with the order of attitudes as disclosed by the distribution analysis data. By means of correlational procedures, it was found, therefore, that those attitudinal areas which were most strongly saturated in the general factor which was revealed by factor analysis technique were the areas which tended to evoke the least number of unfavorable responses, and contrariwise, those areas of prejudice least saturated with the general factor tended to evoke the greatest number of unfavorable responses.

### D. The Meaning of Prejudice in Terms of the Findings of the Present Investigation

It has been established as a consequence of the various analyses of the data in the present investigation that the structure or organization of attitudes toward the Negro is remarkably similar for educated and uneducated respondents. Furthermore, it has been shown that the extent of apparent prejudice in the two experimental groups differs significantly, that is, educated respondents tend to display more favorable attitudes toward the Negro than do uneducated persons. The findings of the present investigation demand some hypothesis to point up the significance which attaches to attitude measurement when the educational achievement of respondents is considered. One hypothesis that may be advanced contends that what was being measured was not prejudice qua prejudice, but, rather, the *ability of respondents with different levels of educational achievement to mask their prejudice.* The meaning which attaches to scale scores must be taken in the light of this last judgment, that is, scale scores reflect the degree to which a respondent is capable of disguising his attitudes. Thus, the relatively poorly educated individual reflects, perhaps, more truly his real attitudes toward the Negro by reason that he is "ill fitted," educationally speaking, to hide or mask his real attitudes; he

therefore scores low in terms of the attitude-measuring instrument. In contrast, as the individual respondent becomes more and more sophisticated, educationally speaking, the validity of his expressed attitudes progressively decreases; a scale score in this instance reflects less the measurement of attitudes as such, and more the measurement of ability to mask attitudes.

## Chapter V

# SUMMARY AND CONCLUSIONS

### A. Purpose

Until relatively recently, most attitude investigations were designed to study the *extent* of an attitude as held by a particular group rather than the broader, and perhaps much more important, problem concerned with the structure or organization of attitudes. With the advent of new and very incisive statistical techniques such as factor analysis, questions relating to the patterning or organization of attitudes became amenable to solution. The present investigation was primarily designed to study certain aspects of the organizational composition of the attitudes of educated and uneducated respondents toward the Negro. The problem was formulated so as to answer the more fundamental psychological question of "generality versus specificity" of attitudes toward the Negro as a function of the educational level of the respondents. In terms of the statistical technique that was used, the following hypothesis was proposed for test: the factor patterns for educated and uneducated groups will differ significantly so that one can infer that uneducated respondents display a more general attitude toward the Negro than do educated respondents. Attitude generality was identified, in the context of factor analysis results, with the presence of a single general factor.

### B. The Data of the Investigation

The universe of content used to test the hypothesis of the investigation consisted in attitudes toward the Negro. Accordingly, a twelve-item scale of attitudes toward the Negro was constructed according to the demands of the Thurstone-Chave technique of equal-appearing intervals and the Likert technique of summated ratings. The twelve items which comprised the scale were selected so that there were six defined areas represented in which prejudice toward the Negro was manifest; each of these areas was defined by two items. The scale was considered to be highly reliable and entirely adequate to the needs of the investigation.

Seven hundred adults participated in the experiment. Three hundred and fifty were relatively well educated, i.e., at least one year of college training, and 350 had eight grades of schooling or less and were considered to comprise the uneducated group. The two groups were matched on the following background factors: age, sex, nativity, marital status, and religious preference.

### C. Treatment of the Data

Two matrices of item intercorrelations, one for each of the experimental groups, were obtained by correlating the responses to each of the scale items with each of the other items in the scale. For this purpose, the tetrachoric coefficient of correlation was used. The two correlation matrices were then subjected to a factor analysis according to the Thurstone multiple-factor analysis method. The procedures used throughout this phase of the data analysis were identical for the two groups.

Another treatment of the data, distribution analysis, consisted in tabulating each group's responses to the individual items and then tabulating the total scale scores of the two groups.

### D. Conclusions

The results of the present investigation tend to support the following conclusions:

1. The structure or organization of attitudes toward the Negro for the two experimental groups is basically the same. This fact is clearly exhibited by the results of the factor analyses.

2. The results of the factor analysis reveal that the same number of factors—one general factor and two group factors—were operative in the two experimental groups. The per cent total variance accounted for by these factors in the two experimental groups was approximately equal—about 70 per cent.

3. Generality of attitudes, as originally defined and posited in the hypothesis of this investigation, was not demonstrated to obtain for either of the two experimental groups. Generality of attitudes toward the Negro was shown to be present in a restricted sense only, i.e., a high-order general factor runs through the scale items in both experimental groups. This general factor is provisionally identified as "Threat" and is present to the same degree in the two experimental groups.

4. It was shown that relatively poorly educated respondents exhibit greater apparent hostility toward the Negro than do the relatively well-educated respondents.

5. The fact that the pattern or organization of hostility toward the Negro is essentially the same for the two experimental groups but that the level of hostility toward the Negro is different in the two groups, gives rise to the question: Do attitude-measuring instruments of the kind used in the present investigation really measure prejudice qua prejudice or, rather, the "ability" to mask prejudice? The ad hoc hypothesis that the factor of education has the effect of making possible greater facility for disguising or masking of prejudice is advanced as a possible answer to the question.

## APPENDIX A

DO NOT FILL IN HERE

The following pages contain a number of statements about which there is no general agreement. People differ in the way they feel about these statements, and there are no right or wrong answers. You can help us by answering each item of this questionnaire honestly and thoughtfully.

Before going on to answer the questionnaire, you will find a list of questions about yourself on the next page which we would like you to answer. It is necessary that you fill in this part since it will give us many important facts. Also, it is very important that you do not skip any questions since that means we cannot use your questionnaire. SINCE YOUR NAME AND ADDRESS IS NOT ASKED FOR, BE AS STRAIGHTFORWARD AND AS HONEST ABOUT YOUR ANSWERS AS YOU CAN.

We also want to assure you that your answers will be kept strictly confidential. Anything that you state here will in no way be used by either your employer or any other organization of which you are a member. To insure this, we have provided this folder with a glued flap which we want you to use to seal the questionnaire after you have filled it out. MOREOVER, WE DO NOT WANT YOU TO SIGN YOUR NAME TO ANY PART OF THE QUESTIONNAIRE.

DO NOT FORGET TO SEAL THIS FOLDER WHEN YOU ARE FINISHED!

### PERSONAL INFORMATION

1. In what country were you born? ☐ United States; ☐ Other (where) .....
2. What sex are you? ☐ Male; ☐ Female.
3. To what race do you belong? ☐ White; ☐ Negro; ☐ Other (what) .....
4. What religion do you consider yourself? ☐ Protestant; ☐ Roman Catholic; ☐ Jewish; ☐ None; ☐ Other (what) .....
5. How old are you now? ..... years.
6. Are you married? ☐ Yes; ☐ No.
7. Are you going to school now? ☐ Yes; ☐ No.
8. Are you working now? ☐ Yes; ☐ No.
9. What kind of work do you usually do? (State the kind of job or occupation, for example, physician, teacher, owner of a grocery store, store salesman, stenographer, bookkeeper, clerk, plumber, riveter, helper, etc.) .....
10. About how much money would you say you are now making each month? $.....
11. (a) Please draw a circle around the highest grade you completed in school:
    Grammar School: None 1 2 3 4 5 6 7 8 High School: 1 2 3 4
    College: 1 2 3 4
    (b) If, in addition, you have gone to any other school, check the appropriate kind of school and indicate the number of years you went.
    ☐ Business College ..... ☐ Teachers College .....
    ☐ Trade School ..... ☐ Nurses Training .....
    ☐ Professional (e.g., Medical, Law, Graduate, etc.) .....
12. In what ward of the city or part of the Philadelphia area do you live? (If you do not know your ward, state the section of the city.) .....

13. People differ in the degree to which they have lived with, worked with, played with, or in general, have had contact with the members of different groups of people. How much experience would you say you have had with the following groups?

| | None | Very Little | Average | Much |
|---|---|---|---|---|
| Jews | ☐ | ☐ | ☐ | ☐ |
| Roman Catholics | ☐ | ☐ | ☐ | ☐ |
| Negroes | ☐ | ☐ | ☐ | ☐ |
| Italians | ☐ | ☐ | ☐ | ☐ |
| Japanese | ☐ | ☐ | ☐ | ☐ |
| Atheists | ☐ | ☐ | ☐ | ☐ |

BEFORE GOING ON, MAKE SURE THAT YOU HAVE ANSWERED ALL THE QUESTIONS!

## DIRECTIONS

READ EACH STATEMENT AND AFTER CAREFUL THOUGHT MARK THE ONE ANSWER WHICH BEST EXPRESSES YOUR FEELING ABOUT THE STATEMENT. Whenever possible, let your own personal experience determine your answer. You may spend as much time as you want to answer the statements. If you are in doubt about any of the statements, choose the one answer which seems to most nearly express your present feeling about the statement. MAKE SURE THAT YOU HAVE ANSWERED ALL THE STATEMENTS FOR IT IS IMPORTANT TO THE SUCCESS OF THIS STUDY THAT THE QUESTIONNAIRE BE COMPLETE.*

AGAIN, WE ASK FOR YOUR HONEST COOPERATION. PLEASE BE FRANK ABOUT YOUR ANSWERS.

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1. THERE WILL ALWAYS BE WAR; IT'S PART OF HUMAN NATURE.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

2. NEGRO PHYSICIANS SHOULD TREAT ONLY NEGRO PATIENTS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

4. ORGANIZATIONS SUCH AS THE ELKS, ROTARIANS, KNIGHTS OF COLUMBUS, MASONS, ETC. OUGHT NOT ALLOW FOR MEMBERSHIP BOTH NEGROES AND WHITES.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

5. THE COMMUNIST PARTY SHOULD BE OUTLAWED IN THIS COUNTRY.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

6. THE ONLY THING THAT NEGROES RESPECT IS BRUTE FORCE.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

7. IT WOULD BE A GOOD IDEA TO KEEP JEWS OUT OF CHRISTIAN NEIGHBORHOODS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

8. NEGROES IN THE ARMY SHOULD NOT BE HOUSED IN THE SAME BARRACKS AS WHITE TROOPS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

9. PRISON IS TOO GOOD FOR SEX CRIMINALS; THEY SHOULD BE PUBLICLY HORSE-WHIPPED OR WORSE.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

10. NEGROES SHOULD NOT BE PERMITTED TO PATRONIZE NIGHT CLUBS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

11. THE NEGRO SHOULD BE GIVEN THE SAME EDUCATIONAL ADVANTAGES AS THE WHITE MAN.
Strongly agree[5] Agree[4] Undecided[3] Disagree[2] Strongly disagree[1]

* There was no item 3 in this questionnaire.

12. JEWS ARE TOO SMART FOR THEIR OWN GOOD.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

13. IT IS BEST THAT NEGROES ONLY BE OFFERED MANUAL LABOR JOBS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

14. THE METROPOLITAN OPERA COMPANY IS CORRECT IN CASTING ITS OPERAS ONLY WITH WHITE ARTISTS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

15. THERE SHOULD BE MORE RELIGIOUS TRAINING IN SCHOOL.
Strongly agree[5] Agree[4] Undecided[3] Disagree[2] Strongly disagree[1]

16. THE NEGRO IS GENERALLY A SHIFTLESS PERSON.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

17. NEGROES OUGHT TO BE ADMITTED TO SEPARATE WARDS IN HOSPITALS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

18. THE MOST IMPORTANT THING TO TEACH CHILDREN IS ABSOLUTE OBEDIENCE TO THEIR PARENTS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

19. THE LYNCHING OF NEGROES FOR THE CRIME OF RAPE IS JUSTIFIED.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

20. IT IS BETTER THAT PUBLIC RESTAURANTS NOT EMPLOY NEGRO COOKS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

21. THIS COUNTRY WOULD BE A WHOLE LOT BETTER OFF IF THERE WEREN'T SO MANY FOREIGNERS HERE.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

22. NEGROES SHOULD BE REGARDED THE SAME AS ANY OTHER GROUP.
Strongly agree[5] Agree[4] Undecided[3] Disagree[2] Strongly disagree[1]

23. NEGROES SHOULD BE GIVEN ONLY SUCH JOBS AS ARE SUPERVISED BY WHITES.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

24. IT WOULD BE A GOOD IDEA TO KEEP NEGROES OUT OF WHITE NEIGHBORHOODS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

25. AFTER YOU HAVE EDUCATED THE NEGRO TO THE LEVEL OF THE WHITE MAN, THERE STILL WILL BE AN IMPASSABLE GULF BETWEEN THEM.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

26. YOU SHOULD NEVER JUDGE A MAN BY HIS RACE OR RELIGION.
Strongly agree[5] Agree[4] Undecided[3] Disagree[2] Strongly disagree[1]

27. WHITE MEN SHOULD NOT HAVE TO WORK WITH NEGROES.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

28. THE OLDER THE NEGRO BOY, THE MORE IMPORTANT IT IS THAT HE GO TO A NEGRO SCHOOL.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

29. THE NEGRO HAS A SPECIAL CONTRIBUTION TO MAKE TO AMERICAN LIFE AND SHOULD BE GIVEN EVERY CHANCE TO DO SO.
Strongly agree[5] Agree[4] Undecided[3] Disagree[2] Strongly disagree[1]

30. IN GENERAL, ROMAN CATHOLICS SHOULD NOT BE ALLOWED TO HOLD HIGH POLITICAL OFFICE.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

31. THE NEGRO SHOULD BE GIVEN THE SAME EDUCATIONAL ADVANTAGES AS THE WHITE MAN.
Strongly agree[5] Agree[4] Undecided[3] Disagree[2] Strongly disagree[1]

32. NEGROES SHOULD HAVE SEPARATE SWIMMING FACILITIES.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

33. WHITE COLLEGES WHICH DO NOT USE NEGRO PROFESSORS ARE JUSTIFIED IN THIS POSITION.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

34. IT IS NOT FAIR TO AMERICAN WORKERS TO ALLOW IMMIGRANTS INTO THIS COUNTRY.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

35. NEGROES SHOULD NOT ENJOY THE SAME VOTING PRIVILEGES AS WHITES, ESPECIALLY IN THE SOUTH, BECAUSE THEY DO NOT KNOW HOW TO USE THIS RIGHT.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

36. THE PRACTICE OF PAYING NEGRO TEACHERS LESS THAN WHITE TEACHERS IS JUSTIFIABLE.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

37. NEGRO TENANTS SHOULD HAVE THE SAME RIGHTS TO RENT AN APARTMENT IN A PUBLIC HOUSING PROJECT AS DO WHITES.
Strongly agree[5] Agree[4] Undecided[3] Disagree[2] Strongly disagree[1]

38. JAPANESE WHO COME TO THIS COUNTRY SHOULD NOT BE GIVEN AMERICAN CITIZENSHIP.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

39. IN COMMUNITIES WHERE NEGROES OUTNUMBER THE WHITES, LYNCHING CAN BE JUSTIFIED AS PUNISHMENT FOR BRUTAL CRIMES AGAINST WHITE WOMEN.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

40. NEGROES SHOULD BE ALLOWED TO ENTER ANY UNIVERSITY THEY CHOOSE.
Strongly agree[5] Agree[4] Undecided[3] Disagree[2] Strongly disagree[1]

41. IN MOST EVERYTHING THEY DO, JEWS TRY TO PUSH THEMSELVES AHEAD OF EVERYBODY ELSE.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

42. THE SOUTHERN STATES ARE JUSTIFIED IN REQUIRING NEGROES TO PAY A VOTING TAX BEFORE THEY CAN BECOME VOTERS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

43. NEGROES WOULD LIKELY PROVE DISLOYAL TO OUR COUNTRY IN THE EVENT OF ANOTHER WAR.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

44. IT IS RIGHT THAT WHITE JOB APPLICANTS BE GIVEN PREFERENCE FOR CIVIL SERVICE JOBS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

45. WHEN THERE IS A DEPRESSION, WE SHOULD SEE TO IT THAT JOBS GO FIRST TO PEOPLE WHO ARE AMERICAN CITIZENS.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

46. IN GENERAL, IT IS A GOOD THING THAT NEGROES ARE NOT ELECTED TO POLITICAL OFFICE IN PROPORTION TO THEIR NUMBER IN THE GENERAL POPULATION.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

47. THERE ARE TWO KINDS OF PEOPLE IN THE WORLD: THE WEAK AND THE STRONG.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

48. NEGROES SHOULD NOT BE ALLOWED TO MIX SOCIALLY WITH WHITES.
Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

49. WHERE THERE IS SEGREGATION, THE NEGRO SECTION SHOULD HAVE THE SAME EQUIPMENT IN PAVING, WATER, AND ELECTRIC LIGHT FACILITIES AS ARE FOUND IN WHITE DISTRICTS.

Strongly agree[5] Agree[4] Undecided[3] Disagree[2] Strongly disagree[1]

50. IT WOULD BE A GOOD IDEA IF MORE BUSINESS FIRMS WOULD REFUSE TO HIRE JEWS.

Strongly agree[1] Agree[2] Undecided[3] Disagree[4] Strongly disagree[5]

PLEASE CHECK TO SEE IF YOU HAVE ANSWERED ALL THE QUESTIONS BEFORE SEALING THE QUESTIONNAIRE!

## Appendix B

### TABLE I

PHI COEFFICIENTS OF CORRELATION AS INDICES OF ITEM DISCRIMINATION FOR STANDARDIZATION, EDUCATED, AND UNEDUCATED SAMPLE CRITERION GROUPS

| Item No. | $\phi_{stand.}$ ($N=268$) | $\phi_{educ.}$ ($N=350$) | $\phi_{uned.}$ ($N=350$) |
|---|---|---|---|
| | SCALE A | | |
| 17 | .951 | .970 | .923 |
| 19 | .523 | .500 | .832 |
| 20 | .461 | .403 | .864 |
| 24 | .920 | .883 | .678 |
| 29 | .350 | .317 | .629 |
| 33 | .870 | .901 | .930 |
| 35 | .643 | .539 | .853 |
| 40 | .539 | .734 | .920 |
| 43 | .337 | .360 | .764 |
| 44 | .655 | .577 | 1.000 |
| 48 | .900 | .911 | .767 |
| 49 | .229 | .101* | .382 |
| Mean | .615 | .600 | .795 |
| | SCALE B | | |
| 4 | .837 | .810 | .753 |
| 6 | .500 | .403 | .844 |
| 8 | .930 | .880 | .709 |
| 10 | .823 | .758 | .832 |
| 11 | .378 | .051* | .523 |
| 22 | .629 | .516 | .826 |
| 23 | .352 | .360 | .877 |
| 28 | .750 | .725 | .932 |
| 36 | .395 | .305 | .750 |
| 37 | .883 | .855 | .639 |
| 39 | .655 | .516 | .808 |
| 42 | .562 | .631 | .844 |
| Mean | .641 | .568 | .778 |
| | SCALE I | | |
| 16 | .631 | .758 | .823 |
| 22 | .629 | .516 | .832 |
| 24 | .920 | .883 | .678 |
| 25 | .880 | .920 | .692 |
| 27 | .684 | .678 | .970 |
| 28 | .750 | .725 | .932 |
| 32 | .900 | .932 | .718 |
| 37 | .883 | .855 | .639 |
| 40 | .539 | .734 | .920 |
| 42 | .562 | .631 | .844 |
| 44 | .655 | .577 | 1.000 |
| 46 | .870 | .860 | .830 |
| Mean | .742 | .755 | .820 |

* Not significant.

### TABLE II

COMPARISON OF THE BACKGROUND VARIABLE OF AGE FOR EDUCATED AND UNEDUCATED SAMPLES

| Age | Sample | |
|---|---|---|
| | Educated | Uneducated |
| 70– | 10 | 10 |
| 65–69 | 11 | 11 |
| 60–64 | 14 | 14 |
| 55–59 | 25 | 25 |
| 50–54 | 38 | 38 |
| 45–49 | 51 | 51 |
| 40–44 | 52 | 52 |
| 35–39 | 59 | 59 |
| 30–34 | 39 | 39 |
| 25–29 | 30 | 30 |
| 20–24 | 18 | 18 |
| 18–19 | 3 | 3 |
| Total | 350 | 350 |

### TABLE III

TABLE OF THIRD-FACTOR RESIDUALS—EDUCATED GROUP*

| Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | |
| 2 | 034 | | | | | | | | | | | |
| 3 | 011 | −072 | | | | | | | | | | |
| 4 | −014 | 029 | −002 | | | | | | | | | |
| 5 | 028 | 010 | 021 | −014 | | | | | | | | |
| 6 | −024 | 026 | 002 | 002 | −236 | | | | | | | |
| 7 | −044 | 069 | 006 | −031 | 025 | 033 | | | | | | |
| 8 | −034 | 011 | 048 | −039 | −026 | 034 | 029 | | | | | |
| 9 | −071 | −064 | 068 | 056 | 057 | 045 | −018 | 010 | | | | |
| 10 | 030 | −044 | 018 | −026 | −021 | 023 | −028 | 035 | −028 | | | |
| 11 | 074 | −019 | −079 | 017 | 043 | −025 | 019 | 003 | −043 | −034 | | |
| 12 | 037 | 016 | 002 | 039 | 005 | −001 | −048 | −056 | −059 | 051 | 040 | |

Mean Residual = 0.001; $SD = 0.039$.

* Decimals properly preceding each entry have been omitted.

TABLE IV

TABLE OF THIRD-FACTOR RESIDUALS—UNEDUCATED GROUP*

| Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | |
| 2 | 004 | | | | | | | | | | | |
| 3 | 039 | −037 | | | | | | | | | | |
| 4 | 026 | 064 | 006 | | | | | | | | | |
| 5 | 026 | 061 | 018 | 034 | | | | | | | | |
| 6 | 016 | −054 | 038 | −087 | −002 | | | | | | | |
| 7 | −029 | −103 | 014 | 022 | −039 | 080 | | | | | | |
| 8 | −024 | 108 | 009 | −018 | 047 | −012 | 011 | | | | | |
| 9 | 020 | −001 | −036 | −004 | −027 | 051 | 023 | 055 | | | | |
| 10 | −011 | −004 | 058 | 028 | −011 | −029 | 040 | −134 | −086 | | | |
| 11 | 017 | −069 | −014 | 003 | 021 | 007 | 057 | −095 | −010 | 042 | | |
| 12 | 048 | −010 | 048 | −053 | −006 | −009 | −035 | −036 | −045 | 062 | 032 | |

Mean Residual = 0.001; $SD$ = 0.043.

* Decimals properly preceding each entry have been omitted.

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